

Amendments to the Drawings:

The attached sheet of drawings includes changes to Figure 5. This sheet replaces the original Figure 5. In Figure 5, previously omitted identification of element 551 has been added.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Applicant has carefully reviewed the above identified application in light of the Office Action dated November 19, 2004. Claims 1-26 remain presented for examination. The specification and figures have been carefully reviewed and amended to address those errors pointed out in the Office Action.

Claims 1, 12 and 23 are the only independent claims.

Applicant notes with appreciation the allowance of Claims 12-22 and the indication that Claims 2-10 and 24-26 would be allowable if rewritten so as not to depend from a rejected claim, and with no change in scope. The latter claims have not been so rewritten because, for the reasons given below, their base claim is believed to be allowable.

Claims 1 and 23 were rejected under 35 U.S.C. § 102 as anticipated by U.S. Patent 6,650,657 (Abdelilah).

The present invention, as defined by independent claim 1, is a method for determining the location of robbed bits in an echo signal that has passed through a communications network, a portion of which network being digital. The method comprises transmitting a known training signal, which signal comprises a plurality of portions into which a robbed bit may be inserted in a known location within said portions. The method further comprises detecting the amplitudes of the echo of said portions of said training signal that are received over said network and determining from said amplitudes which portions of said echo include a robbed bit. The method further comprises generating a signal indicating the location of said robbed bit in said echos.

As described above, the invention relates to analyzing an echo signal to determine the location within that echo signal that relates to a robbed bit -- whose location in the originally transmitted training signal is known.

As understood by applicants, Abdelilah relates to identifying "Robbed Bit Signal (RBS) and PAD impairments in a plurality of sets of Digital Impairment Learning (DIL) signals that are repeatedly transmitted from a server modem to a client modem during a corresponding plurality of DIL intervals" (col. 5, lines 18-23). The Abdelilah patent does not specifically define the

acronym "PAD". A search of the United States Patent & Trademark Office's patent database yielded U.S. Patent 6,381,267 ('267) which addresses the same technology, comprises the same seven inventors and was filed essentially at the same time as the Abdelilah patent. In '267 a definition for PAD is contained in the following passage:

The V.90 standard, therefore, provides a framework for transmitting data at rates up to 56 kbps provided the network is capable of supporting the higher rates. The most notable requirement is that there can be at most one digital-to-analog conversion and subsequent analog-to-digital conversion in the path. Nevertheless, other digital impairments, such as robbed bit signaling (RBS) and digital mapping through packet assemblers/disassemblers (PADS), which results in attenuated signals, can also inhibit transmission at V.90 rates. Communication channels exhibiting non-linear frequency response characteristics are yet another impediment to transmission at the V.90 rates. Moreover, these other factors may limit conventional V.90 performance to less than the 56 kbps theoretical data rate (col. 4, lines 48-57).

Applicant submits that the above quoted definition of the acronym "PAD" as a "packet assembler/disassembler" is consistent with its use in the prior art and is the correct intended use in the Abdelilah patent. Further, the above quoted problem of "attenuated signals" associated with PADs is addressed throughout Abdelilah (e.g., col. 4, line 33 and col. 13, line 38-48 wherein the PAD determination performed by block 520 of Fig. 5 is described in detail). Applicant submits that the Examiner improperly included the present invention's determination of amplitudes of echo in Abdelilah's determination of PAD impairments.

Further, Paragraph 3 of the Office Action applies various features of Abdelilah against the language of claim 1. However, it is clear that Abdelilah is performing an entirely different function than that performed in claim 1. As recited in paragraph 3 of the Office Action (and the corresponding description in the Abdelilah patent), Abdelilah first identifies a portion of the DIL training signal that is not subject to a robbed bit, determines the PAD levels for this interval and uses this PAD level information to identify RMS type(s) for the DIL signals in the remaining DIL intervals.

Assuming for the sake of argument that PAD level information is meant to include some measurement of echo, Abdelilah is silent as to determining which portions of the training

signal's echo signal include a robbed bit, as recited in claim 1 of the present invention. Moreover, Abdelilah teaches away from this feature as his echo analysis (i.e., his determination of PAD levels) is specifically limited to analyzing a training signal which is not subject to a robbed bit.

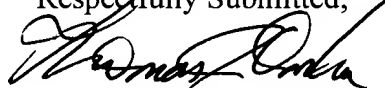
Applicant submits that Abdelilah fails to teach or suggest the feature of claim 1 wherein a training signal having a robbed bit inserted is transmitted over a network and the amplitudes of the echo of that training signal is used to determine which portions of said echo include a robbed bit. Accordingly, claim 1 is deemed patentable over Abdelilah.

Claim 23 is an apparatus claim corresponding to method claim 1 which also contains this feature wherein a determination is made of which portions of the echo include a robbed bit. Accordingly, it is deemed patentable over Abdelilah for the same reasons.

A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as references against claims 1 and 23. These claims are therefore believed patentable over the art of record.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Respectfully Submitted,



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